

Insects: Native

Douglas-fir beetle

Dendroctonus pseudotsugae

Region 4: Idaho, Utah, and Wyoming

Host: Douglas-fir

Douglas-fir beetle-caused tree mortality decreased significantly across Region 4. In 2006, over 19,100 acres were affected compared to 140,800 acres in 2005. Most of the Douglas-fir mortality for 2006 was scattered across southern Idaho with the majority mapped on the Salmon-Challis National Forest (S-C). However, at 6,200 acres affected on the S-C in 2006, the amount of acres was half of the acreage mapped on the S-C in 2005. Both the Ashley National Forest in Utah and the Bridger-Teton National Forest in Wyoming saw significant reductions in affected acres, from 33,100 and 19,100 acres in 2005 to 1,400 and 1,300 acres mapped in 2006. Increased precipitation in 2005 may have contributed to the decline in tree mortality as residual trees recovered from the effects of the previous drought.

Douglas-fir tussock moth

Orgyia pseudotsugata

Region 4: Idaho, Nevada and Utah

Hosts: Douglas-fir, true firs

Defoliation of Douglas- and subalpine fir attributed to Douglas-fir tussock moth continued to decrease in 2006. Approximately 2,700 acres of defoliation were reported in 2006 compared to 10,500 acres mapped in 2005. Over 1,000 acres of Douglas-fir tussock moth defoliation occurred on Bureau of Land Management lands in Idaho. Douglas-fir tussock moth defoliation was confirmed in the Ketchum/Sun Valley area. The last time Douglas-fir tussock moth occurred in this area was in 1992 during a state-wide Douglas-fir tussock moth outbreak.

Fir engraver beetle

Scolytus ventralis

Region 4: California, Idaho, Nevada, and Utah

Hosts: grand fir, red fir, subalpine fir, white fir

Fir engraver beetle-caused tree mortality continues to decrease region-wide in 2006. Aerial surveyors recorded over 21,000 acres with fir mortality in 2006, compared to 65,800 acres reported in 2005. On the Humboldt-Toiyabe National Forest in Nevada, fir mortality increased slightly from 12,400 acres in 2005 to 16,000 acres in 2006. Most of this mortality occurred on the Ely and Jarbidge Ranger Districts. Additionally, Great Basin National Park in Nevada had 2,200 acres with mapped fir mortality. In Utah, the Fishlake National Forest had 1,400 acres with mortality.

Forest tent caterpillar
Malacosoma disstria

Region 4: California, Idaho, Nevada, Utah, and Wyoming
Hosts: aspen, cottonwood

In 2006, forest tent caterpillar defoliation was not detected during aerial surveys. However, isolated pockets of forest tent caterpillar and fall webworm defoliation were noted throughout the region based on ground observations.

Jeffrey pine beetle
Dendroctonus jeffreyi

Region 4: California, Nevada
Host: Jeffrey pine

Jeffrey pine beetle-caused mortality nearly doubled in 2006. Approximately 900 trees were killed over 450 acres. Most of the mortality occurred on the Carson Ranger District of the Humboldt-Toiyabe National Forest affecting nearly 700 trees over 330 acres.

Mountain pine beetle
Dendroctonus ponderosae

Region 4: California, Idaho, Nevada, Utah, and Wyoming
Hosts: bristlecone, limber, lodgepole, Jeffrey, ponderosa, western white, and whitebark pines

Mountain pine beetle- (MPB) caused tree mortality decreased from 2.4 million trees killed over 615,700 acres in 2005 to 1.7 million trees killed over 510,500 acres in 2006. Most of the mortality occurred in three distinct areas. In central Idaho on the Salmon-Challis National Forest and Sawtooth National Recreation Area, a total of 827,200 lodgepole, whitebark and limber pine trees were killed over 205,500 acres in 2006, compared to 863,700 lodgepole and whitebark pine trees killed over 246,000 acres in 2005. Bark beetle caused tree mortality began in this area in 1998. This MPB outbreak is currently the largest recorded in the Region. The MPB infestation appears to be moving west onto the Boise National Forest where an additional 125,200 lodgepole and whitebark pine trees were killed over 21,000 acres. The second outbreak area is located in western Wyoming on the Bridger-Teton National Forest. Tree mortality decreased from approximately 818,300 lodgepole and whitebark pine trees killed over 201,100 acres in 2005 to 469,500 trees killed over 165,500 acres. The third outbreak area is in northern Utah on the Wasatch-Cache and Ashley National Forests. This outbreak, in its fourth consecutive year, decreased from 504,000 lodgepole and ponderosa pine trees killed over 101,200 acres in 2005 to 169,700 lodgepole and ponderosa pine trees killed over 74,200 acres in 2006.

Pine engraver beetle
Ips pini

Region 4: Idaho and Utah

Hosts: lodgepole and ponderosa pine

Approximately 150 trees on Bureau of Land Management and National Forest lands in Idaho were killed in 2006. Tree mortality caused by pine engraver beetle remained at endemic levels throughout the Region. An increased in top-killed ponderosa pine was noted on the Boise National Forest, Idaho Bureau of Land Management, State of Idaho and private lands in 2006.

Spruce beetle

Dendroctonus rufipennis

Region 4: Idaho, Utah, and Wyoming

Host: spruce

In 2006, Engelmann spruce beetle mortality decreased to 20,700 trees killed over 12,800 acres compared to 83,200 trees killed over 35,400 acres in 2005. Nearly all of the mortality occurred in Utah, where each National Forests (N.F.) experienced some level of spruce mortality. Forests where heavier mortality was mapped included; the Loa and Beaver Ranger Districts on the Fishlake N.F. (2,500 ac. & 1,100 ac., respectively), the Price Ranger District on the Manti-La Sal N.F. (2,700 ac.) and the Heber Ranger District on the Uinta N.F. (1,200 ac.). Spruce mortality was also mapped on private lands from central to southern Utah affecting 1,000 acres.

Western pine beetle

Dendroctonus brevicornis

Region 4: Idaho

Host: ponderosa pine

In 2006, the number of ponderosa pine trees killed by western pine beetle attacks remained at endemic levels. Most of the mortality occurred on National Forests and private lands in Idaho. Approximately 1,000 trees were killed affecting 500 acres in 2006, compared to 1,500 trees killed over 600 acres in 2005.

Western spruce budworm

Choristoneura occidentalis

Region 4: Idaho, Utah, and Wyoming

Hosts: Douglas-fir and true firs

Western spruce budworm-caused tree defoliation tripled in 2006 affecting 342,900 acres compared to 103,600 acres of defoliation mapped in 2005. Defoliation was reported on nearly all ownerships in south-central Idaho and the southern part of Utah. In Idaho, for the second consecutive year, most of the defoliation occurred on the Boise National Forest (102,600 acres). Moderate to heavy defoliation were also reported on the Salmon-Challis (81,500 acres) and Sawtooth (34,500 acres) National Forests; Bureau of Land Management lands (11,900 acres),

State of Idaho lands (8,500 acres) and private lands (3,300 acres). In Utah, the Fishlake and Dixie National Forests had moderate to heavy budworm defoliation with 51,200 and 33,200 acres affected, respectively. Private land in Utah had 3,300 acres of moderate to heavy defoliation.

Pinyon ips
Ips confusus

Region 4: California, Nevada, and Utah
Host: Pinyon pine

Historically, in the Intermountain Region, pinyon-juniper forests have not been aerially surveyed. However, the dramatic increase in pinyon mortality during 2001 and 2002, which resulted from an extended drought and increased pinyon ips populations, necessitated documenting this widespread mortality. By 2005, the pinyon ips outbreak had collapsed. Therefore, much of the pinyon/juniper forest type was not surveyed in 2005 or 2006. Of the pinyon forest type surveyed in 2006, approximately 12,800 pinyon pines were mapped across 9,200 acres. Most of the tree mortality was reported in Utah (7,300 trees across 5,100 acres). The remainder occurred in Nevada (5,500 trees across 4,000 acres). In Utah, most of the mortality occurred on the Dixie National Forest. In Nevada, most of the mortality occurred on private and Bureau of Land Management lands.

Insects: Nonnative

European gypsy moth
Lymantria dispar

Region 4: Idaho, Nevada, and Utah
Hosts: various deciduous species

Gypsy moth was first detected in Utah in 1988. Since then, male moths have been captured in various locations throughout the region nearly every year. In 2006, no male moths were captured in any delimitation-trapping grids. In 2005, one male moth was captured in Utah and two separate single male moths were captured in Wyoming.

Balsam Woolly Adelgid
Adelges piceae Ratzeburg

Region 4: Idaho
Hosts: subalpine and grand firs

While this introduced forest insect has been present in northern Idaho (Region 1) since 1983, its presence in southern Idaho (Region 4) was not verified until 2001, when it was found killing

subalpine fir trees in residential areas of Cascade and McCall. In 2006, delimitation surveys were conducted by personnel from Idaho Department of Lands and Intermountain Region Forest Health Protection to determine the distribution of balsam woolly adelgid (BWA) south of the Salmon River. From these surveys, we have identified the presence of BWA on state, private and Forest Service lands as far south as Smith's Ferry, as far west as Sturgill Peak, and as far east as Johnson Creek. Continuing delimitation surveys and the establishment of long-term evaluation plots are planned for 2007.

Diseases: Native

Annosum root disease

Heterobasidion annosum

Region 4: California, Idaho, Nevada, Utah, and Wyoming

Hosts: bitterbrush, chokecherry, Douglas-fir, true firs, spruce and Jeffrey, lodgepole, and ponderosa pines

This disease can be found throughout the Region, but mostly as a saprophyte on dead trees, stumps, roots, and cull logs or fallen stems. The fungus occasionally kills young ponderosa pine especially in plantations on droughty soils.

Armillaria root disease

Armillaria spp.

Region 4: Idaho, Nevada, Utah, and Wyoming

Hosts: Douglas-fir, grand fir, pines, spruce, and subalpine fir

Evidence of Armillaria root disease can be found throughout the Region but the fungus functions primarily as a weak pathogen or saprophyte causing little direct mortality. In southern Utah, it may act as a primary pathogen, killing mature and immature ponderosa pine and mature fir and spruce on cool sites at high elevation.

Black stain root disease

Ophiostoma wagneri

Region 4: Idaho, Nevada, and Utah

Host: pinyon pine

Aerial detection and follow-up ground surveys have discovered about two-dozen root disease centers in pinyon pine stands in the Intermountain Region. Perennial infections caused mortality of individual pinyon pine over 50-acres of the Bureau of Land Management Burley District in southern Idaho. In Utah and Nevada, the host is more prevalent and so is the occurrence of black stain root disease. Nevertheless, fewer than 1,500 acres of pinyon pine in each state have been found infected with the root disease.

Dwarf mistletoes
Arceuthobium spp.

Region 4: Idaho, Nevada, Utah, and Wyoming
Hosts: Douglas-fir, pines, true firs, spruce, and western larch

These plant parasites remain the most widespread and frequently observed disease within the Intermountain Region. Regional incidence by major host species is declining due to landscape level wildfires. Although it has been 25 years since the last dwarf mistletoe survey, Forest Health Specialists estimate occurrence is as follows: lodgepole pine 40%, ponderosa pine 15%, and Douglas-fir 15%. These percentages by host type represent stands having some level of infection.

Diseases: Nonnative

Whitepine blister rust
Cronartium ribicola

Region 4: California, Idaho, Nevada, and Wyoming
Hosts: limber, whitebark, bristlecone, western white and sugar pines

This introduced disease is common throughout its hosts range in southern Idaho and western Wyoming. It is present in the western portion of the Intermountain Region in California and Nevada near the Lake Tahoe area. No infection has been found or reported in Utah; but the disease has been identified very close to the Utah border in southern Idaho and to the west in the Jarbidge Mountains of northeastern Nevada. Recent observations of whitepine blister rust in eastern Nevada are cause for concern because they are close to highly sensitive bristlecone pine populations in Great Basin National Park and elsewhere. Overall, five-needled pine trees are of low occurrence and frequency in the Intermountain Region. Often relegated to high alpine areas, these pines grow slowly but provide important ecosystem functions such as providing shade and stabilization of snow retention for watershed integrity, recreation, aesthetics, and wildlife habitat and usage.

Declines and Complexes

Subalpine fir mortality complex

Region 4: Idaho, Nevada, Wyoming, and Utah
Host: subalpine fir

Decline and die-off of subalpine fir started in the late 1980's in the Intermountain Region with the peak mortality period occurring during mid-1990 when over a million trees were affected by this complex. Although there are a number of pathogens involved in this complex, the primary insect causing subalpine fir mortality is the western balsam bark beetle; *Dryocoetes confusus*.

Drought compounded by overstocked and overmature stand conditions also contribute to subalpine fir mortality. In 2006, approximately 125,300 subalpine fir trees died over 61,700 acres. This is nearly half of the mortality reported in 2005 of approximately 284,200 subalpine fir trees killed over 161,300 acres. The Bridger-Teton National Forest in Wyoming accounted for the majority of subalpine fir mortality for the third consecutive year with 45,400 trees killed over 25,100 acres down from 90,200 trees killed over 47,900 acres in 2005. An additional 20,900 trees were killed across 4,500 acres of Bureau of Land Management and 3,900 trees across 900 acres of private lands in Wyoming. Both Idaho and Utah experienced high levels of subalpine fir mortality. Most of the mortality in both states was scattered across national forest land. In Idaho, the Salmon-Challis National Forest had the highest amount of mortality (15,700 trees over 8,100 acres). In Utah, most of the mortality occurred on the Uinta (5,100 trees over 2,700 acres) and Wasatch-Cache (5,100 trees over 3,200 acres) National Forests and private lands (4,900 trees over 3,200 acres).

FOREST PEST INFORMATION SYSTEM (FPIS)

Region: 4

Date: 1/29/07

Name of Preparer: Kathleen Matthews

		Land	Acres	Volume	Number	Number
Pest	State	Ownership	Infested	Killed	of Trees	of SPB
		Class	(thousands)	(MCF)	Killed	Spots
			(1 decimal)	(1 decimal)	(thousands)	
DFB	ID	1	11.5	691.9	23.1	
		2	0.4	22.1	0.7	
		3	0.3	17.9	0.6	
	UT	1	4.0	254.6	8.5	
		2	0.2	18.1	0.6	
		3	0.9	55.5	1.9	
	WY	1	1.3	71.5	2.4	
		2	0.4	26.9	.9	
		3	0.1	5.5	.2	
DFTM	ID	1	0.9			
		2	1.0			
		3	0.8			
FEB	CA	1	0.7	22.2	0.7	
		2	0.0	0.2	0.0	
		3	0.2	7.0	0.2	
	ID	1	0.1	6.1	0.2	
		2	0.0	0.0	0.0	
		3	0.0	1.8	0.1	
	NV	1	12.5	462.5	15.4	
		2	2.8	119.9	4.0	
		3	0.6	16.3	0.5	
	UT	1	3.4	224.5	7.5	
		2	0.0	1.2	0.0	
		3	0.7	35.9	1.2	

		Land	Acres	Volume	Number	Number
Pest	State	Ownership	Infested	Killed	of Trees	of SPB
		Class	(thousands)	(MCF)	Killed	Spots
			(1 decimal	(1 decimal)	(thousands)	
MPB	CA	1	0.4	18.1	0.9	
		2	0.0	0.0	0.0	
		3	0.2	2.7	0.1	
	ID	1	235.3	15,587.0	974.2	
		2	2.4	93.0	5.8	
		3	1.3	64.4	4.0	
	NV	1	3.9	113.1	7.0	
		2	0.1	3.8	0.2	
		3	0.1	2.8	0.2	
	UT	1	72.6	3,307.4	165.4	
		2	2.9	96.8	4.8	
		3	7.8	303.2	15.2	
	WY	1	168.5	7,624.3	476.5	
		2	8.5	553.9	34.6	
		3	6.7	361.5	22.6	
PIPS *	NV	1	0.1	0.0	0.3	
		2	1.6	0.3	2.1	
		3	2.3	0.4	3.1	
	UT	1	5.1	0.9	7.2	
		2	0.0	0.0	0.0	
		3	0.0	0.0	0.0	
SB	UT	1	11.6	1,691.7	18.8	
		2	0.0	0.9	0.0	
		3	1.2	168.6	1.9	
WPB	ID	1	0.4	15.3	0.8	
		2	0.1	2.2	0.1	
		3	0.1	2.6	0.1	

* *Ips confusus* Pinyon ips

[illegible]